

## Refine Search

### Search Results -

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L12 and (terephthalic acid.ti. or aromatic carboxylic acid.ti.)	4

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US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

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L14

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DATE: Thursday, June 15, 2006    [Printable Copy](#)    [Create Case](#)

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side by side

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result set

*DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

<u>L14</u>	L12 and (terephthalic acid.ti. or aromatic carboxylic acid.ti.)	4	<u>L14</u>
<u>L13</u>	L12 and 562/\$	31	<u>L13</u>
<u>L12</u>	L11 and convers\$9	98	<u>L12</u>
<u>L11</u>	L10 and terephthalic acid and xylene	189	<u>L11</u>
<u>L10</u>	oxygen and countercurrent	15295	<u>L10</u>

*DB=USPT; PLUR=YES; OP=ADJ*

<u>L9</u>	L6 and convers\$6	0	<u>L9</u>
<u>L8</u>	L6 and countercurrent	0	<u>L8</u>
<u>L7</u>	L6 anmd countercurrent	0	<u>L7</u>
<u>L6</u>	L5 or 2734914.pn. or 2552267.pn. or 2479067.pn.	6	<u>L6</u>
<u>L5</u>	2887511.pn. or 2833816.pn. or 2788367.pn.	3	<u>L5</u>
<u>L4</u>	L3 and oxygen and countercurrent	3	<u>L4</u>
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<u>L2</u>	L1 and oxygen and countercurrent	2	<u>L2</u>

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☐ 1. Document ID: US 20050107630 A1

L13: Entry 1 of 31

File: PGPB

May 19, 2005

PGPUB-DOCUMENT-NUMBER: 20050107630

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050107630 A1

TITLE: Staged countercurrent oxidation

PUBLICATION-DATE: May 19, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Belmonte, Frank G.	Hawthorn Woods	IL	US
Sikkenga, David L.	Wheaton	IL	US
Ogundiran, Olusola Sunday	League City	TX	US
Abrams, Kenneth J.	Naperville	IL	US
Leung, Linus Kai-Wah	Naperville	IL	US
Meller, Christopher G.	Carol Stream	IL	US
Figgins, Dale A.	Houston	TX	US
Mossman, Allen B.	Wheaton	IL	US

US-CL-CURRENT: 562/421

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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☐ 2. Document ID: US 20040199006 A1

L13: Entry 2 of 31

File: PGPB

Oct 7, 2004

PGPUB-DOCUMENT-NUMBER: 20040199006

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040199006 A1

TITLE: Production of aromatic carboxylic acids

PUBLICATION-DATE: October 7, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Graham, Derek Alexander	Cleveland		GB

Hamley, Paul Anthony	Nottingham	GB
Oliver, Raymond	Stockton On Tees	GB
Poliakoff, Martyn	Nottingham	GB
Woodcock, Duncan C.	Cheshire	GB
Ilkenhans, Thomas	Cambridge	GB

US-CL-CURRENT: 562/412

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw. De
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☐ 3. Document ID: US 20020028968 A1

L13: Entry 3 of 31

File: PGPB

Mar 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020028968

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020028968 A1

TITLE: Production of aromatic carboxylic acids

PUBLICATION-DATE: March 7, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Graham, Derek Alexander	Cleveland		GB
Hamley, Paul Anthony	Nottingham		GB
Ilkenhans, Thomas	Cambridge		GB
Oliver, Raymond	Stockton on Tees		GB
Poliakoff, Martyn	Nottingham		GB
Woodcock, Duncan C.	Cheshire		GB

US-CL-CURRENT: 562/415

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw. De
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☐ 4. Document ID: US 6765113 B2

L13: Entry 4 of 31

File: USPT

Jul 20, 2004

US-PAT-NO: 6765113

DOCUMENT-IDENTIFIER: US 6765113 B2

TITLE: Production of aromatic carboxylic acids

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw. De
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☐ 5. Document ID: US 6448436 B1

L13: Entry 5 of 31

File: USPT

Sep 10, 2002

US-PAT-NO: 6448436

DOCUMENT-IDENTIFIER: US 6448436 B1

TITLE: Integrated process for the production of 2, 6-naphthalene dicarboxylic acid

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw. De
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☐ 6. Document ID: US 6288273 B1

L13: Entry 6 of 31

File: USPT

Sep 11, 2001

US-PAT-NO: 6288273

DOCUMENT-IDENTIFIER: US 6288273 B1

TITLE: Method for producing shell catalysts for catalytic gas-phase oxidation of aromatic hydrocarbons

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw. De
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☐ 7. Document ID: US 6288270 B1

L13: Entry 7 of 31

File: USPT

Sep 11, 2001

US-PAT-NO: 6288270

DOCUMENT-IDENTIFIER: US 6288270 B1

TITLE: Methods for controlling the reaction rate of a hydrocarbon to an acid by making phase-related adjustments

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw. De
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☐ 8. Document ID: US 6183698 B1

L13: Entry 8 of 31

File: USPT

Feb 6, 2001

US-PAT-NO: 6183698

DOCUMENT-IDENTIFIER: US 6183698 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Devices for controlling the reaction rate of a hydrocarbon to an intermediate oxidation product by pressure drop adjustments

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw. De
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☐ 9. Document ID: US 6143927 A

L13: Entry 9 of 31

File: USPT

Nov 7, 2000

US-PAT-NO: 6143927

DOCUMENT-IDENTIFIER: US 6143927 A

TITLE: Methods for removing catalyst after oxidation of hydrocarbons

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw De
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☐ 10. Document ID: US 6137001 A

L13: Entry 10 of 31

File: USPT

Oct 24, 2000

US-PAT-NO: 6137001

DOCUMENT-IDENTIFIER: US 6137001 A

TITLE: Process for preparing aromatic carboxylic acids with efficient treatments of gaseous effluent

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw De
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☐ 11. Document ID: US 6037491 A

L13: Entry 11 of 31

File: USPT

Mar 14, 2000

US-PAT-NO: 6037491

DOCUMENT-IDENTIFIER: US 6037491 A

TITLE: Methods and devices for controlling hydrocarbon oxidations to respective acids by adjusting the solvent to hydrocarbon ratio

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	K/MC	Draw. De
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☐ 12. Document ID: US 5998572 A

L13: Entry 12 of 31

File: USPT

Dec 7, 1999

US-PAT-NO: 5998572

DOCUMENT-IDENTIFIER: US 5998572 A

TITLE: Methods and devices for controlling the oxidation of a hydrocarbon to an acid by regulating temperature/conversion relationship in multi-stage arrangements

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	K/MC	Draw. De
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☐ 13. Document ID: US 5980801 A

L13: Entry 13 of 31

File: USPT

Nov 9, 1999

US-PAT-NO: 5980801

DOCUMENT-IDENTIFIER: US 5980801 A

TITLE: Methods of preparing an intermediate oxidation product from a hydrocarbon by utilizing an activated initiator

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	K/MC	Draw. De
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☐ 14. Document ID: US 5961942 A

L13: Entry 14 of 31

File: USPT

Oct 5, 1999

US-PAT-NO: 5961942

DOCUMENT-IDENTIFIER: US 5961942 A

TITLE: Effluent gas treatment

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 15. Document ID: US 5939582 A

L13: Entry 15 of 31

File: USPT

Aug 17, 1999

US-PAT-NO: 5939582

DOCUMENT-IDENTIFIER: US 5939582 A

TITLE: Reaction control by regulating internal condensation inside a reactor

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 16. Document ID: US 5883292 A

L13: Entry 16 of 31

File: USPT

Mar 16, 1999

US-PAT-NO: 5883292

DOCUMENT-IDENTIFIER: US 5883292 A

TITLE: Reaction control by regulating internal condensation inside a reactor

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 17. Document ID: US 5877341 A

L13: Entry 17 of 31

File: USPT

Mar 2, 1999

US-PAT-NO: 5877341

DOCUMENT-IDENTIFIER: US 5877341 A

TITLE: Methods and devices for controlling the reaction rate of a hydrocarbon to an intermediate oxidation product by pressure drop adjustments

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 18. Document ID: US 5824819 A

L13: Entry 18 of 31

File: USPT

Oct 20, 1998

US-PAT-NO: 5824819

DOCUMENT-IDENTIFIER: US 5824819 A

TITLE: Methods of preparing an intermediate oxidation product from a hydrocarbon by utilizing an activated initiator

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 19. Document ID: US 5817868 A

L13: Entry 19 of 31

File: USPT

Oct 6, 1998

US-PAT-NO: 5817868

DOCUMENT-IDENTIFIER: US 5817868 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Method and devices for controlling the oxidation of a hydrocarbon to an acid by regulating temperature/conversion relationship in multi-stage arrangements

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 20. Document ID: US 5801282 A

L13: Entry 20 of 31

File: USPT

Sep 1, 1998

US-PAT-NO: 5801282

DOCUMENT-IDENTIFIER: US 5801282 A

TITLE: Methods of making intermediate oxidation products by controlling pre-coalescing temperature and transient temperature difference in an atomized liquid

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 21. Document ID: US 5801273 A

L13: Entry 21 of 31

File: USPT

Sep 1, 1998

US-PAT-NO: 5801273

DOCUMENT-IDENTIFIER: US 5801273 A

TITLE: Methods and devices for controlling the reaction rate of a hydrocarbon to an intermediate oxidation product by pressure drop adjustments

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw De
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☐ 22. Document ID: US 5705682 A

L13: Entry 22 of 31

File: USPT

Jan 6, 1998

US-PAT-NO: 5705682

DOCUMENT-IDENTIFIER: US 5705682 A

TITLE: Process for producing highly pure terephthalic acid

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw De
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☐ 23. Document ID: US 5654475 A

L13: Entry 23 of 31

File: USPT

Aug 5, 1997

US-PAT-NO: 5654475

DOCUMENT-IDENTIFIER: US 5654475 A

TITLE: Methods of making intermediate oxidation products by controlling oxidation rates in an atomized liquid

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw De
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☐ 24. Document ID: US 5614159 A

L13: Entry 24 of 31

File: USPT

Mar 25, 1997

US-PAT-NO: 5614159

DOCUMENT-IDENTIFIER: US 5614159 A

TITLE: Process for the purification of an oxidation off gas with energy recovery

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 25. Document ID: US 5583254 A

L13: Entry 25 of 31

File: USPT

Dec 10, 1996

US-PAT-NO: 5583254

DOCUMENT-IDENTIFIER: US 5583254 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Process for the production of purified terephthalic acid

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 26. Document ID: US 5580531 A

L13: Entry 26 of 31

File: USPT

Dec 3, 1996

US-PAT-NO: 5580531

DOCUMENT-IDENTIFIER: US 5580531 A

TITLE: Devices for making reaction products by controlling transient conversion in an atomized liquid

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 27. Document ID: US 5558842 A

L13: Entry 27 of 31

File: USPT

Sep 24, 1996

US-PAT-NO: 5558842

DOCUMENT-IDENTIFIER: US 5558842 A

TITLE: Devices for making reaction products by controlling pre-coalescing temperature and transient temperature difference in an atomized liquid

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 28. Document ID: US 5502245 A

L13: Entry 28 of 31

File: USPT

Mar 26, 1996

US-PAT-NO: 5502245

DOCUMENT-IDENTIFIER: US 5502245 A

TITLE: Methods of making intermediate oxidation products by controlling transient conversion in an atomized liquid

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 29. Document ID: US 4956493 A

L13: Entry 29 of 31

File: USPT

Sep 11, 1990

US-PAT-NO: 4956493

DOCUMENT-IDENTIFIER: US 4956493 A

TITLE: Process for producing methacrylic ester

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 30. Document ID: US 4302595 A

L13: Entry 30 of 31

File: USPT

Nov 24, 1981

US-PAT-NO: 4302595

DOCUMENT-IDENTIFIER: US 4302595 A

TITLE: Process for the preparation of terephthalic acid by the hydrolysis of intermediate stage crude dimethyl terephthalate

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 31. Document ID: US 4259522 A

L13: Entry 31 of 31

File: USPT

Mar 31, 1981

US-PAT-NO: 4259522

DOCUMENT-IDENTIFIER: US 4259522 A

TITLE: Process for the production of isophthalic acid

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw. De
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